

PATENT SPECIFICATION



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295,791

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PROVISIONAL SPECIFICATION.

Improvements relating to Electro-plating Apparatus.

We, W. CANNING & COMPANY LIMITED, a company duly incorporated under the laws of Great Britain, and GEORGE ARTHUR POPE, a British subject, both of 133-137, Great Hampton Street, in the City of Birmingham, do hereby declare the nature of this invention to be as follows:—

The invention has for its object to provide improved electro-plating apparatus of the kind in which a barrel, open at its upper end, is used, the barrel being rotated about an inclined or vertical axis.

The invention comprises the employment of a removable perforated container adapted to be mounted within the barrel.

The invention also comprises the provision on the axis of the container, of a cathode which may be in part in the form of a sleeve adapted to slide over a central spindle, the anode being of annular form and arranged within the barrel.

Further the invention comprises the provision on or near the base of the barrel, of an external contact ring electrically connected to the anode.

In one manner of carrying the invention into effect, a barrel of suitable diameter and having its upper end open, is secured by means of its closed base to a driving spindle which is arranged coaxially with the barrel. The end of the spindle beneath the barrel is carried in a suitable bearing. Preferably this bearing is adjustable for varying the inclination of the axis of the barrel, and for this purpose the bearing is pivotally mounted on a transverse driving shaft, and has formed with or secured to it a lever through the outer end of which passes a screw whereby the position of the lever relatively to a base can be varied. Motion is transmitted from the driving shaft to the barrel spindle by means of worm gearing. Whilst the barrel is normally used

in an inclined position, provision may be made, if required, for operating it with the axis vertical.

Within the barrel is arranged a removable perforated container. This is preferably made from insulating material, and is adapted to contain the articles to be plated. The container is preferably open at its outer end and is closed at its inner end, and to the closed base is attached by means of a boss a brass or other suitable metal sleeve which can slide over the inner projecting end of the spindle which locates the container, the sleeve serving wholly or in part as the cathode of the apparatus. Radial pieces connected with the sleeve or boss are preferably arranged on the base of the container to form part of the cathode.

The anode is in the form of an annulus arranged around the interior of the barrel and connected electrically to a ring on the outer side of the base of the barrel. Current is conveyed to the anode by a brush bearing against the said ring. The circuit is completed through the cathode spindle and bearing to which latter or any other convenient part of the machine a terminal is secured.

By the employment of a removable perforated container within an open-ended barrel as above described, we are able to facilitate the manipulation of small articles which are usually treated in apparatus of the kind described; the other features mentioned above, moreover, afford important conveniences in the construction and operation of such apparatus.

The invention is not limited to any subordinate mechanical or constructional details as these may be varied to meet different requirements.

Dated this 17th day of June, 1927.

MARKS & CLERK.

COMPLETE SPECIFICATION.

Improvements relating to Electro-plating Apparatus.

We, W. CANNING & COMPANY LIMITED, a company duly incorporated under the laws of Great Britain, and GEORGE ARTHUR POPE, a British subject, both of [Printed]

Price 4s 6d

133-137, Great Hampton Street, in the City of Birmingham, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The invention has for its object to provide improved electro-plating apparatus of the kind in which a barrel, open at its upper end, is used, the barrel being rotated about an inclined or vertical axis.

The invention comprises the employment of a removable perforated container adapted to be mounted within the barrel, and provided with a central cathode sleeve which can slide over a projecting inner end of a driving spindle secured to the base of the barrel, the sleeve and spindle serving to hold the container in position within the barrel.

The accompanying drawing illustrates partly in section an electro-plating apparatus constructed in accordance with this invention.

In carrying the invention into effect as shown, a barrel *a* of suitable diameter and having its upper end open, is secured by means of its closed base *b* to a driving spindle *c* which is arranged coaxially with the barrel. The end of the spindle beneath the barrel is carried in a suitable bearing *d*. Preferably this bearing is adjustable for varying the inclination of the axis of the barrel, and for this purpose the bearing is pivotally mounted on a transverse driving shaft *e*, and has formed with or secured to it a lever *f* through the outer end of which passes a screw *g* whereby the position of the lever relatively to the base *h* can be varied. The screw is actuated by a hand wheel *i*. Motion is transmitted from the driving shaft *e* to the barrel spindle by means of a worm *j* and worm wheel *k*. The shaft *e* is driven by a belt pulley *l* or other convenient means. Whilst the barrel is normally used in an inclined position as shown, provision may be made, if required, for operating it with the axis vertical.

Within the barrel is arranged a removable perforated container *m*. This is preferably made from insulating material, and is adapted to contain the articles to be plated. The container is preferably open at its outer end and is closed at its inner end, and to the closed base *q* is attached by means of a boss *n* a brass or

other suitable metal sleeve *o* which can slide over the inner projecting end of the driving spindle *c* which locates the container, the sleeve serving wholly or in part as the cathode of the apparatus. Radial metal pieces *p* connected with the boss *n* are preferably arranged on the base of the container to form part of the cathode. The sleeve is closed at its outer end by a metal plug *r*, a split extension *s* of which engages a slot in the spindle. The container is preferably fitted at its upper end with handles as *t*.

The anode is in the form of an annulus *u* arranged within the interior of the barrel and connected electrically to a ring *v* on the outer side of the base of the barrel. Current is conveyed to the anode by a brush *w* bearing against the said ring. The circuit is completed through the cathode sleeve *o*, the spindle *c* and the bearing *d* to which latter or any other convenient part of the machine a terminal *x* is secured.

By the arrangement of a removable perforated container within an open-ended barrel in the manner above described, we are able to facilitate the manipulation of small articles which are usually treated in apparatus of the kind described; the other features mentioned above, moreover, afford important conveniences in the construction and operation of such apparatus.

The invention is not limited to any subordinate mechanical or constructional details as these may be varied to meet different requirements.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. In electro-plating apparatus of the kind specified, the employment of a removable perforated container adapted to be mounted within the barrel, and provided with a central cathode sleeve which can slide over a projecting inner end of a driving spindle secured to the base of the barrel, the sleeve and spindle serving to hold the container in position within the barrel, substantially as described.

2. Electro-plating apparatus as claimed in Claim 1 and comprising the combination and arrangement of parts, substantially as described and illustrated.

Dated this 27th day of January, 1928.

MARKS & CLERK.

This Drawing is a reproduction of the Original on a reduced scale.

